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### (54) CO<sub>2</sub> LASER BEAM MACHINE

#### (57) Abstract:

**PURPOSE:** To enable piercing at a high speed with high accuracy by reflecting a laser beam by a pair of rotationally moving mirrors and providing optical parts for focusing the beams to a prescribed plane.

**CONSTITUTION:** The galvanomirrors 5, 6 are so rotated and positioned as to irradiate the prescribed piercing position with the laser beam according to the processing data previously inputted to a control unit 16. A light emission trigger signal is sent from this control unit 16 to a CO<sub>2</sub> laser oscillator 1 and the laser beam 2 is outputted at a prescribed laser output and width. The laser beam 2 is reflected by the mirrors 3, 4, is polarized in a prescribed direction by the galvanomirrors 5, 6 and is focused by f & theta;, by which a sheet 9 is irradiated and subjected piercing. The surface of the sheet 9 is nearly perpendicularly irradiated with the converging part of the laser beam 1. The sheet 9 is pierced with the piercing hole perpendicularly to the processing surface thereof with good accuracy.

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